
e-Diagnostics Measurement & Assessment

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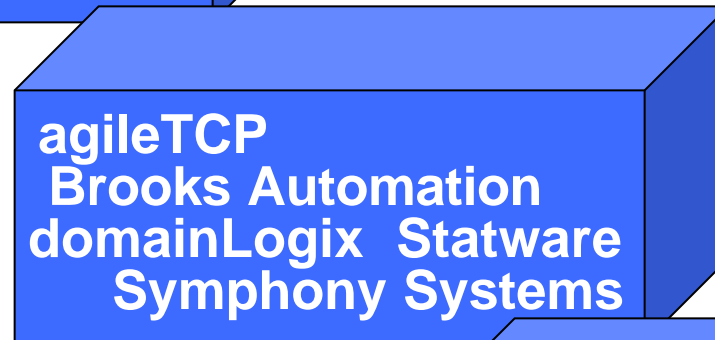
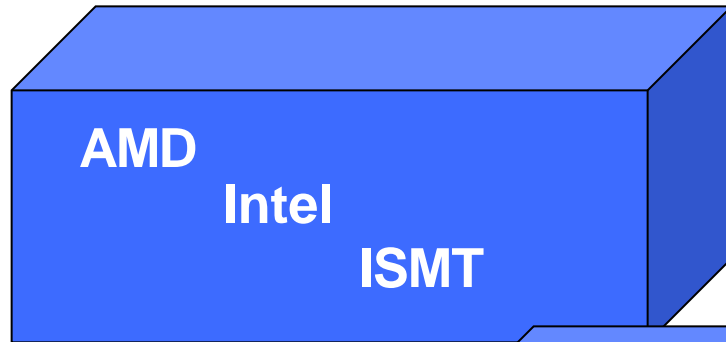
INTERNATIONAL
SEMATECH

Measurement & Assessment Team Goals

- **Define the process and mechanisms by which IC Makers and Suppliers can assess guideline compliance of e-Diagnostics solutions**
- **Keep the compliance metrics or scorecards as succinct and straight forward as practical**
- **Delta's identify topics for resolution – opportunities for shared understanding - between IC Makers and e-Diagnostics Suppliers**

Team Participation

- Measurement & Assessment Team included representatives from:



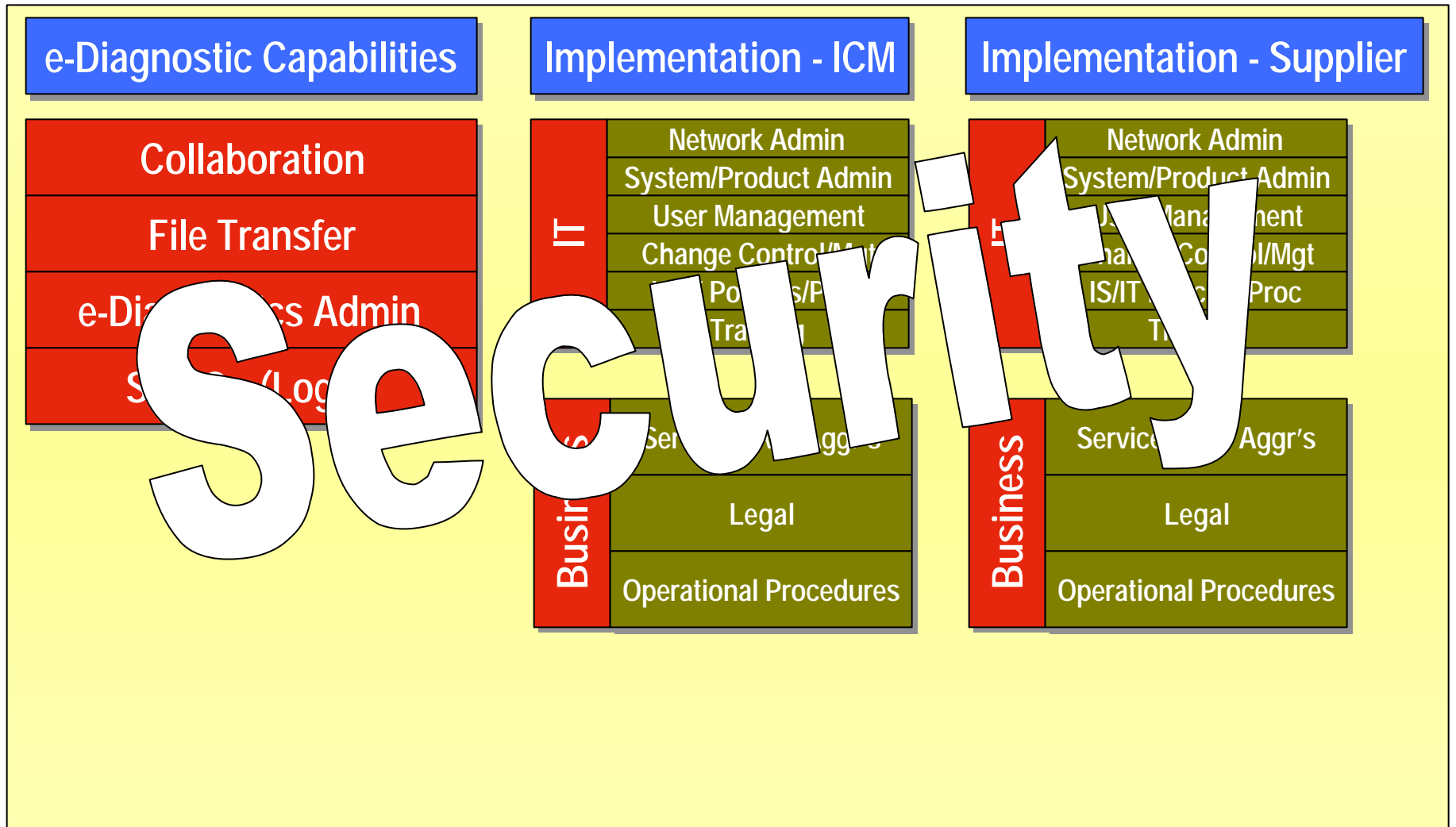
M&A Sub-team Guidelines/Principles

- Assessment metrics based on previous work
 - e-Diagnostics Capability definitions & Use Case scenarios
- Pass/Fail scorecards to assess tangible parts of e-Diagnostics solutions with compliance requirements
 - Factory Tool and e-Diagnostics Server(s)
 - Security aspects of solutions
- Provide specific guidance to IC Maker/Supplier pairs as they plan for and implement specific solutions
 - e-Diagnostics Capability, IC Maker, and Supplier Implementation Scorecards

M&A Sub-team Results To Date

- eDiagCapability (formerly Level 0 Tool-Server) draft checklist complete
- IC Maker and Supplier Readiness draft underway
 - Identified individual and “shared ownership” areas
 - Weekly progress
- Security checklist merged into eDiagCapability, ICM, and Supplier areas
- Decision on audit method
 - Self-audit with the expectation that a complete evaluation of a specific implementation of an e-Diagnostics solution (i.e., for an IC Maker/Supplier pair), will require a fresh review of each companies audit results

e-Diagnostics Checklist Structure



e-Diagnostics Checklist Details

e-Diagnostics Compliance Scorecard e-diagnostics capability -Level 0 (rev 2.2)

Capability

Compliance Element Code

RED = Mandatory
YELLOW = Optional

Capability Description

Collaboration	TS-CO0.8	Voice transmission	YELLOW	YELLOW	Ability to provide Voice over IP between the ICM and Supplier during a collaboration session.
	TS-CO0.7	Video transmission	YELLOW	YELLOW	Ability to provide streaming video between the ICM and Supplier during a collaboration session.
	TS-CO0.6	Still image capture	YELLOW	YELLOW	Ability to exchange still images between ICM and Supplier during a collaboration session.
	TS-CO0.5	Real-time white board drawing	YELLOW	YELLOW	Ability to provide "white board" capability between ICM and Supplier during a collaboration session.
	TS-CO0.4	Real-time application sharing	YELLOW	YELLOW	Ability to provide real-time application sharing within the collaboration session. Does not include remote administration or remote tool control applications covered in Capability Level 1.
	TS-CO0.3	Chat Capability	RED	RED	Ability to support multi user Text Chat sessions among all ICM and Supplier participants during a collaboration session.
	TS-CO0.2	Application Sharing Technologies Used	RED	RED	Acceptable technologies for use in application sharing are data, voice and/or video.
	TS-CO0.1	Application Sharing	RED	RED	Ability to configure as required the applications and the conditions upon which they may be shared on the e-diagnostic server between ICM and Supplier.

Feature Requirement

Area of focus

e-Diagnostics Capability, Level 0

e-Diagnostics Compliance Scorecard					
e-diagnostics capability -Level 0 (rev 3.01)					
	RED	= Mandatory			
	YELLOW	= Optional			
Collaboration	TS-CO0.8	Voice transmission	YELLOW	YELLOW	Ability to provide Voice over IP between the ICM and Supplier during a collaboration session.
	TS-CO0.7	Video transmission	YELLOW	YELLOW	Ability to provide streaming video between the ICM and Supplier during a collaboration session.
	TS-CO0.6	Still image capture	YELLOW	YELLOW	Ability to exchange still images between ICM and Supplier during a collaboration session.
	TS-CO0.5	Real-time white board drawing	YELLOW	YELLOW	Ability to provide basic "white board" capability between ICM and Supplier during a collaboration session.
	TS-CO0.4	Real-time application sharing	YELLOW	YELLOW	Ability to share applications necessary for collaboration. Does not include remote administration or remote tool control applications covered in Capability Level 1.
	TS-CO0.3	Chat Capability	RED	RED	Ability to support multi user Text Chat sessions among all ICM and Supplier participants during a collaboration session.
	TS-CO0.2	Secure Conferencing	RED	RED	If conferencing is available, the eDiagnostic system must provide the mechanisms to ensure that only authorized personnel have access into the secure conference
	TS-CO0.1	Technologies	RED	RED	The Collaboration technologies used must be agreed upon between IC Maker and supplier. This includes Data, Voice,

e-Diagnostics Capability, Level 0

e-Diagnostics Compliance Scorecard					
e-diagnostics capability -Level 0 (rev 3.0)					
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File Transfer	TS-FT0.4	Dynamically authorize files for transfer	RED	RED	The ability to request and grant permission to transfer files not on the pre authorized list
	TS-FT0.3	Pre-authorized File Transfer	RED	RED	The ability to provide certain users with the capability to transfer pre-authorized files without requiring permission for each
	TS-FT0.2	Two Step File Transfer-To Tool	RED	RED	File uploads are done in two steps,ending in a pre-defined staging area on the tool. Executing or incorporating files must be done by a separate procedure. Every transfer is recorded, including what was transferred and who did it.
	TS-FT0.1	Two step file transfer-From Tool	RED	RED	File transfer is done in two steps, tool-server-user. There is no direct access to the tool. Every transfer is recorded including what was transferred and who did it.
e-Diagnostics System Admin	TS-AD0.3	Network Performance Management	RED	RED	The e-Diagnostics system shall provide Network Performance Management (potentially via the Application Layer) to stay within acceptable network limits. Network performance is both bandwidth and latency.
	TS-AD0.2	e-Diagnostics Administration Capabilities	RED	RED	The e-Diagnostics System administration capabilities must include User and Server Management capabilities. It should also include Vendor Tool management as well as e-Diagnostics Network management where necessary.
	TS-AD0.1	Remote Admin of e-Diagnostics Server	RED	RED	The e-Diagnostics system must have the capability for secure and controlled administration across the wire. The security to contorll access for admin needs special consideration vs. end

e-Diagnostics Capability, Level 0

e-Diagnostics Compliance Scorecard					
e-diagnostics capability -Level 0 (rev 3.0)					
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SignOn (Login)	TS-SE0.5	Access control mechanisms			The e-Diagnostics System must provide access control mechanisms to provide protection for IC maker and Supplier information, data, applications.
	TS-SE0.4	Complete Audit Trail of user history within e-Diagnostics environment			A record of users logging in/out of the e-Diagnostics environment as well as actions performed.
	TS-SE0.3	Authorization within the E-Diagnostics			The user is granted the appropriate capabilities or privileges based on role and policies within the e-Diagnostics System.
	TS-SE0.2	Credentials for the e-Diagnostics System			The e-Diagnostics System must allow for Remote Users credentials to be integrated into the Authentication Subsystem of e-Diagnostics Security System.
	TS-SE0.1	Centralized access into e-Diagnostics System			All access into the e-Diagnostics System must go through a central point where each user will be properly authenticated and authorized. Access will be denied without successful authentication and authorization.

Integrated Chip Maker (ICM) Checklist, Level 0, IT, DRAFT

Area	Compliance Element Code	Compliance Elements	Description
Network Administration		Inter Company Network Connection	Setting up the network connection to ISP, setting up VPN terminations
		e-Diagnostics DMZs	Setting up the physical network, allocation of public IP addresses, routing between DMZs, Internet, and Intranet.
		Network Access Control	Setting up SRC-DEST-Protocol-Ports for Supplier to DMZ, DMZ to DMZ, DMZ to Intranet, and Factory Internal Equipment Network
		Factory Equipment e-Diagnostics Network	Connection of tool computer to e-Diagnostics network, Integration of the e-Diagnostics network to other local factory networks such as Automation Networks, Equipment Engineering Data Networks
System & Product Administration		e-Diagnostics Servers	Computer hardware/operating install/software installation, configuration (hardened) for e-Diagnostics services in e-Diagnostics DMZs
		Infrastructure Services	Computer hardware/operating install/software installation, configuration (hardened) for infrastructure services required by e-Diagnostics services (Directory, Authentication, Authorization, DNS, Email, HTTP Proxy, etc) in e-Diagnostics DMZs and in the Intranet
		Equipment Computers	Computer hardware/operating install/software installation, configuration (hardened) of computers in equipment

Integrated Chip Maker (ICM) Checklist, Level 0, IT, DRAFT

Area	Compliance Element Code	Compliance Elements	Description
User Management		Remote User Credentials	The process of adding remote user credentials to directory and mapping credentials to user profiles
		Authentication at Signon	Processes for adding remote users to the community of e-Diagnostics users
		Authorization at Signon	Processes for adding user groups, authorization profiles and application profiles for e-Diagnostics Users
		Equipment Computer Privileges	Processes for adding remote users accounts and privileges to the equipment computers
Change Control & Management		White Paper process	Processes for implementing change within the IC Makers. This needs to be coordinated between the various change control boards for end-to-end system integrity
Information Security Policies & Procedures		e-Diagnostics Security Policies	Need description
		e-Diagnostics Security Procedures	Need description
Training		IT	Procedures for IT Components
		Tool Owner	User Management for tool computers

Integrated Chip Maker (ICM) Checklist, Level 0, Business, DRAFT

Area	Compliance Element Code	Compliance Elements	Description
Service Level Agreements		Performance	Need to define system and component level performance
		Availability	Need to define system and component level availability
		Support process	Define process to provide for tactical activities such as user management, troubleshooting
		Escalation process	Define process for management escalation for support problems, etc
		Maintenance & Upgrades	Define process to provide for maintenance & upgrade activities including change management & control
		Product Documentation	Define process to provide latest documentation
Legal Stuff		Contracts	Contracts to include e-Diagnostics
		Product Specification	Product Specs to include e-Diagnostics features
		Equipment data IP	Legal ratification of the equipment data classification
Operational Procedures		Factory Operations Specification	Operational specifications for tool owners for usage of e-Diagnostics system
		Factory Safety Guidelines	Environmental and safety guidelines for e-Diagnostics usage

Supplier Checklist, Level 0, IT, DRAFT

Area	Compliance Element Code	Compliance Elements	Description
Network Administration		Inter Company Network Connection	Setting up the network connection to ISP, setting up VPN terminations
		Customer Service Network	Setting up the physical network, setting up remote access, allocation of public IP addresses, firewalling from the Intranet and restricted access to the IC Maker e-Diagnostics systems
		Network Access Control	Setting up SRC-DEST-Protocol-Ports for Supplier to DMZ
System & Product Administration		e-Diagnostics Servers	Computer hardware/operating systems/software installation, configuration (hardened) for e-Diagnostics services in e-Diagnostics DMZs
		Service PCs	Computer hardware/operating systems/software installation, configuration (hardened) for remote users
		Equipment Computers	Computer hardware/operating install/software installation, configuration (hardened) of computers in equipment

Supplier Checklist, Level 0, IT, DRAFT

Area	Compliance Element Code	Compliance Elements	Description
User Management		Remote User Credentials	The process of working with suppliers to create and share the list of remote support personnel.
		Authentication at Signon	Processes for adding remote users to the community of e-Diagnostics users at supplier
		Authorization at Signon	Processes for providing supplier with user groups, authorization policies and application profiles for e-Diagnostics Users
		Equipment Computer Privileges	Processes for providing supplier with information for remote users accounts and privileges to the equipment computers
Change Control & Management		White Paper process	Processes for implementing change within suppliers. This needs to be coordinated between the various change control boards for end-to-end system integrity
Information Security Policies & Procedures		e-Diagnostics Security Policies	Need description
		e-Diagnostics Security Procedures	Need description
Training		IT	Procedures for IT Components
		Tool Owner	User Management for tool computers

Supplier Checklist, Level 0, Business, DRAFT

Area	Compliance Element Code	Compliance Elements	Description
Service Level Agreements		Performance	Need to define system and component level performance
		Availability	Need to define system and component level availability
		Support process	Define process to provide for tactical activities such as user management, troubleshooting
		Escalation process	Define process for management escalation for support problems, etc
		Maintenance & Upgrades	Define process to provide for maintenance & upgrade activities including change management & control
		Product Documentation	Define process to provide latest documentation
Legal Stuff		Contracts	Contracts to include e-Diagnostics
		Equipment data IP	Legal ratification of the equipment data classification
Operational Procedures		Remote User and FSE Operations Specification	Operational specifications for tool owners for usage of e-Diagnostics system

M&A Team Baby Steps

- **Review/integrate policies/procedures (legal)**
- **Identify “shared” ICM/Supplier areas**
- **Garner consensus on descriptions**

What's Next

- **Oct '01 Finalize Level 0**
- **Oct '01 Define Level 1 e-Diagnostics (Tool-Server) Scorecard**
- **Nov '01 Standalone checklist on ISMT web site**
- **Dec '01 Include checklist in e-Diagnostics Guidebook**
- **Q4 '01 Initial drafts for Level 2 and Level 3**